Minister's Report to Parents
Student Assessment Results for Nova Scotia

2002

Language Arts
Mathematics
Science

Provincial
National
International

Assessments

103-03669/

Minister's Report to Parents
Student Assessment Results for Nova Scotia

Nova Scotia

Dear Parents:

I'm pleased to provide you with the second annual *Minister's Report to Parents*. It's part of our commitment to provide you with more and better information about how our students are doing in school. If we are all aware of this information, then we can work together to help students reach their full potential.

The results in this report are for the 2001–2002 school year. The report contains the most recent results of assessments conducted with Nova Scotia students in language arts, mathematics, and science at the provincial, national, and international levels.

I'm pleased to see some improvement in our science results. Last year, our grade 12 students achieved higher average provincial marks in chemistry and physics than they did in the previous year.

Our great area of concern, however, remains our students' achievement in reading, writing, and math. Many of our students continue to struggle with these basics, which are so important to their future learning.

While I wish these results had been better, they are providing us with important information. We will use these results to improve students' learning to help them achieve better results.

Please be assured that we do have a plan. It's called *Learning for Life*, and it was launched in September 2002. Over time, the measures in this plan will help Nova Scotia children to succeed in school and in life. Some highlights include

- giving our youngest students the attention they need by reducing class size in the early years
- supporting grade 7 students' development as readers with 100 000 new reading books
- ensuring students get a strong foundation in the basics through more class time spent on math and reading
- helping students improve math skills by providing math-leader workshops for teachers
- helping early readers by expanding Reading Recovery
- helping parents support their children's reading at home with more information

In 2004, we will introduce an elementary literacy assessment and send each child's mark to his or her parents, and give schools their own results to help with their school improvement plans.

As I'm sure you can appreciate, there is no quick fix to improve these results. Every day, we will continue to work with school boards, teachers and parents to give our students every opportunity to reach their full potential. May I take this opportunity to thank you for your role in advancing your child's education.

Angus MacIsaac

Honourable Angus MacIsaac
Minister of Education

Background

Social Context

Nova Scotia is a small province with a population of 944 765, and a higher rural population than the Canadian average. Population growth is currently below 1 percent annually. Immigration is low both in absolute numbers and compared to immigration in Canada as a whole. About 9 percent of the population speaks both English and French, or French only. Among the total population, 2 percent is African Canadian, 1.4 percent is Aboriginal, and 1.5 percent consists of other visible minorities. Unemployment rates in Nova Scotia are typically above the Canadian average.

Organization of the School System

In the 2001–2002 school year Nova Scotia's total public school population was 153 450 from primary to grade 12. The province had a teaching force of 9655 and an overall student/teacher full-time equivalent (FTE) ratio of 16.5. There are seven school boards. Six boards are regional school boards, including the Southwest Regional School Board, which is divided into two district school boards, and one is a provincial school board for Acadian/Francophone students, known as the *Conseil scolaire acadien provincial.* About 97.4 percent of the students are enrolled in Anglophone school boards, and about 2.6 percent of the students are enrolled in the *Conseil scolaire acadien provincial.* Overall, school enrolment is expected to continue to decrease over the next few years.

Children who are 5 years old on or before October 1 of the current school year are admitted to primary school. Students must attend school until they are 16 years old.

School Board Funding

Funding for school boards has increased and student enrolments have declined over the years as presented in the chart below.

Year	Total	Funded Enrolment	Per Student
1997–98	$660 084 693	162 029	$4074
1998–99	$722 061 813	160 902	$4488
1999–00	$750 821 400	158 750	$4730
2000–01	$754 108 200	156 761	$4811
2001–02	$761 653 500	154 476	$4931
2002–03	$808 179 400	151 862	$5322

Note: Funding adjusted to remove the impact of Early Retirement Plan

Assessment

Assessment results are a reliable indicator and a performance measure of the success of the provincial public school system. As an indicator, results are the basis for subsequent actions and directed policies. As a performance measure, results gauge the progress of public school education and the consequences of the subsequent actions and policies.

Assessment results, along with other information, are used by the Department of Education to improve the quality of educational decision making. Our goal is to enhance the learning environment for all students in Nova Scotia.

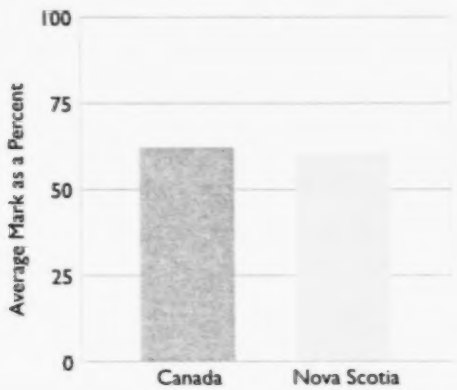
The *Minister's Report to Parents: 2002*, the second annual publication of assessment results, provides up-to-date information on the performance of students in Nova Scotia, in provincial, national, and international assessments.

Understanding the Results

The reader needs to be aware that this is a statistical report based on a sample of students. This means that the results in this report are accurate but not precise. The results, as presented, are averages. These averages fall within a range that must be considered when interpreting the results.

When results are compared either from one year to the next, or from one jurisdiction to another, simply looking at the height of the bars in each chart may be misleading. What may look like an improvement or decline in the results may, in fact, not be significant. This is because the averages used to produce the charts actually fall within certain statistical limits.

To use an example, a result of 62 percent may actually be a little higher or lower due to measurement error. In this example, let's consider that the measurement error is +/- 2 percent. This would mean that the actual results are somewhere between 60 percent and 64 percent. Therefore, if Nova Scotia averaged 60 percent on a national assessment, and the Canadian average were 62 percent, then there would be no statistical difference between the two results. For example, when interpreting the chart below, it would be wrong to say that Nova Scotia students performed below the Canadian average. Despite looking as if they had a lower result on the chart, Nova Scotia students would have performed as well as students in Canada as a whole.



Throughout this report, each chart that includes yearly and national comparisons will also indicate if the results are statistically significant.

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Minister's Report to Parents

The *Minister's Report to Parents* publishes information on the achievement of Nova Scotia students in recent provincial, national, and international assessments of language arts, mathematics, and science. This year's report is the second to be published. Included in the report for 2002 is an action plan to address the results.

Purpose of the Minister's Report to Parents

The purpose of the report is to provide assessment results that, in conjunction with other relevant information, can be used to enhance the learning environment of students in Nova Scotia and provide a reliable foundation for educational decision making and subsequent actions.

Assessment Sources Used

Some assessments are not administered on an annual basis and thus no new information is available. In these cases, a brief summary of the results from last year's *Minister's Report to Parents* is provided. Three sources of information were used to prepare the report. A brief description of each follows.

Program of Learning Assessment for Nova Scotia (PLANS)
Nova Scotia develops and administers assessments for elementary, junior high, and senior high schools as part of the Program of Learning Assessment for Nova Scotia (PLANS). Included in PLANS are alternating assessments in language arts and mathematics in elementary and junior high schools. As well, Nova Scotia Examinations (NSE) are administered to grade 12 students in English language arts and the sciences. Mathematics examinations are in development. Provincial assessments for Acadian/Francophone students are in development.

School Achievement Indicators Program (SAIP)
The School Achievement Indicators Program (SAIP) is a national assessment comprising cycled administrations of mathematics, reading and writing, and science. The first assessment of mathematics was administered in Nova Scotia in 1993. The assessment was marked using five levels of criteria, increasing in difficulty from level 1 to level 5. The standard for performance is level 2 or above for 13-year-olds and level 3 or above for 16-year-olds. Acadian/Francophone students wrote the national assessment in French.

Programme of International Student Assessment (PISA)

The international assessment known as Programme of International Student Assessment (PISA) was administered in 32 countries including Canada. All Canadian provinces participated in the assessment. PISA engages students in demonstrating their performance in reading, mathematics, and science.

PISA was administered for the first time in Nova Scotia in the spring of 2000 to 15-year-old students. Results are presented by ranking the performance of Nova Scotia students among the performance of students from other provinces in Canada and in other nations.

Organization of the Minister's Report to Parents: 2002

The *Minister's Report to Parents: 2002* is organized into three sections with summary results for provincial, national, and international assessments, by subject area:

- Language Arts
- Mathematics
- Science

Summary of Assessment Results for Language Arts

Provincial Assessment

Elementary Reading and Writing Assessment 1999 and 2000

In 1999 and 2000 the Elementary Reading and Writing Assessment was administered to grade 6 students. The results were reported in last year's edition of the *Minister's Report to Parents*. In summary, in 1999 more students performed at the level of expectation in the reading part of the assessment than they did in 2000. For the writing part, students performed similarly in 1999 and 2000. Information from the assessment was used to strengthen the elementary program.

Summary of Previous Results

Year	Assessment	Grade	Results
1999	Reading	6	60% of students met level of expectation
	Writing	6	71% of students met level of expectation
2000	Reading	6	51% of students met level of expectation
	Writing	6	67% of students met level of expectation

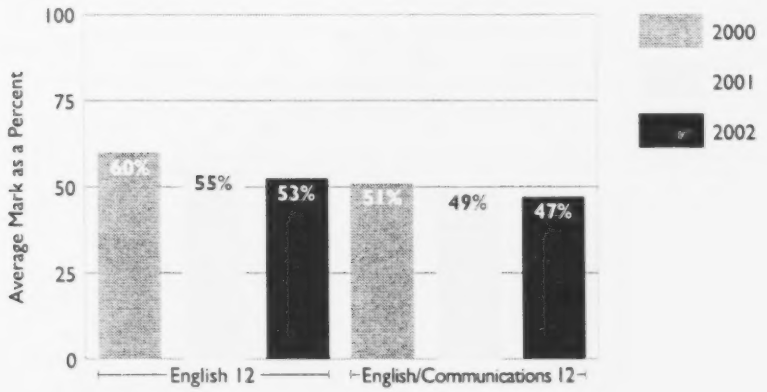
In October 2003, the new Elementary Literacy Assessment will be administered to students in grade 6. Individual student results will be given to parents. Students who do not achieve at the provincial level of expectation will receive help to improve their literacy skills. Results for each board will be published in a future edition of the *Minister's Report to Parents*.

English 12 and English/Communications 12 Examinations

During the 1999–2000, 2000–2001, and 2001–2002 school years, Nova Scotia Examinations (NSE) were administered to grade 12 students completing their English 12 and English/Communications 12 courses at the end of January and June.

The pass mark for NSE is 50 percent. The examinations count as 30 percent of a student's final course mark. Class marks comprise the other 70 percent. The results presented below are for the examination only. The chart shows the provincial results in both courses over the last three school years.

Grade 12 English Language Arts Examinations



A small fluctuation in the results over the last three years is exhibited in the chart. These fluctuations are not statistically significant. (See Understanding the Results, pages vi–vii.) It will take time to determine the trend of the results and the impact of the actions that government is undertaking to improve student learning in reading and writing. Nevertheless, the provincial averages for the three-year period are lower than expected for students in the final year of public school education.

The following two charts show the school board results for English 12 and English/Communications 12 examinations written in January and June 2002.

AVRSB—Annapolis Valley Regional School Board
CBVRSB—Cape Breton-Victoria Regional School Board
CCRSB—Chignecto-Central Regional School Board
CSAP—Conseil scolaire acadien provincial
HRSB—Halifax Regional School Board
SRSB—Strait Regional School Board
SSDSB—South Shore District School Board
TCDSB—Tri-County District School Board

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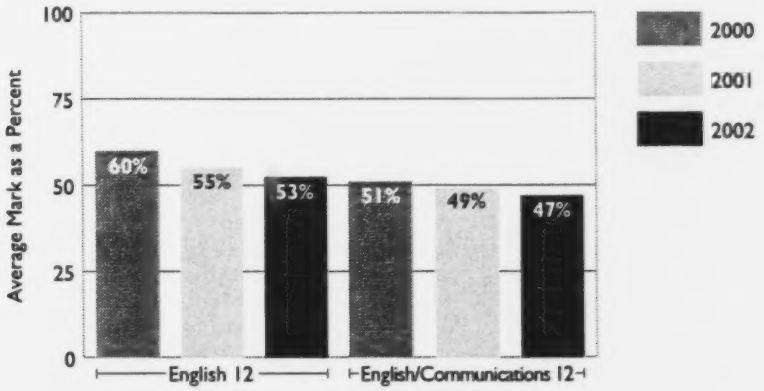

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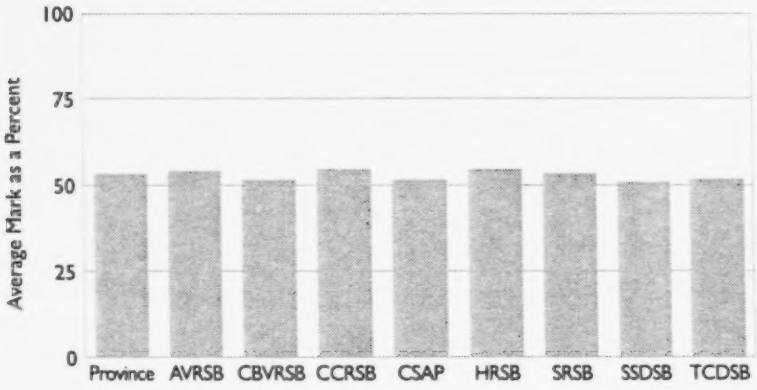
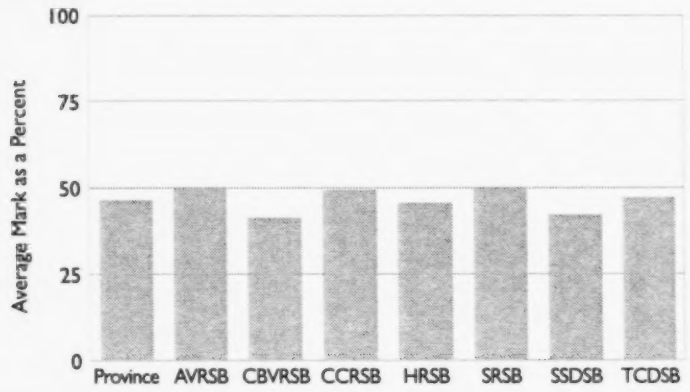
English 12 Examinations by Board



English/Communications 12 Examinations by Board



Results for each board are compared with the results for the province as a whole. There is no statistical significance observed in the board results in comparison to the provincial results for English 12 and English/Communications 12 (see Understanding the Results, pages vi–vii).

National Assessment

SAIP

There are no new results to report from the SAIP in the area of language arts. Reading and writing are assessed separately in SAIP. Both 13- and 16-year-old students are assessed.

Summary of Previous Results

Year	Assessment	Age	Results
1994	Reading	13	At the national average
		16	At the national average
	Writing	13	At the national average
		16	At the national average
1998	Reading	13	Below the national average
		16	Below the national average
	Writing	13	At the national average
		16	Above the national average

The results from the SAIP writing assessment administered in the spring of 2002 will appear in the next edition of the *Minister's Report to Parents*.

International Assessment

PISA

The international assessment, PISA, was administered for the first time in the spring of 2000. Fifteen-year-old students in Nova Scotia participated in a reading assessment, along with students in other provinces of Canada and in 31 other countries. Canadian territories did not participate in the assessment. Canada was one of the top ranked countries in the assessment. There are no new results to report.

Summary of Previous Results

Year	Assessment	Age	Results
2000	Reading	15	Above the international average, below the Canadian average. Nova Scotia ranked 14th out of a total of 42 (32 countries and 10 provinces).

PISA will be administered again in the spring of 2003. Results will appear in a future edition of the *Minister's Report to Parents*.

Summary of Assessment Results for Mathematics

Provincial Assessment

Elementary Mathematics

The Elementary Mathematics Program Assessment was conducted with grade 5 students in the spring of 2001. The results were reported in last year's *Minister's Report to Parents*. The following is a summary of the 2001 results.

Summary of Previous Results

Year	Assessment	Grade	Results
2001	Mathematics	5	The provincial average mark was 42.1 percent.

A number of actions in the action plan in last year's *Minister's Report to Parents* addressed these results. The next administration of the elementary mathematics program assessment is scheduled for May 2003, and the results will appear in the next edition of the *Minister's Report to Parents*.

Junior High Mathematics

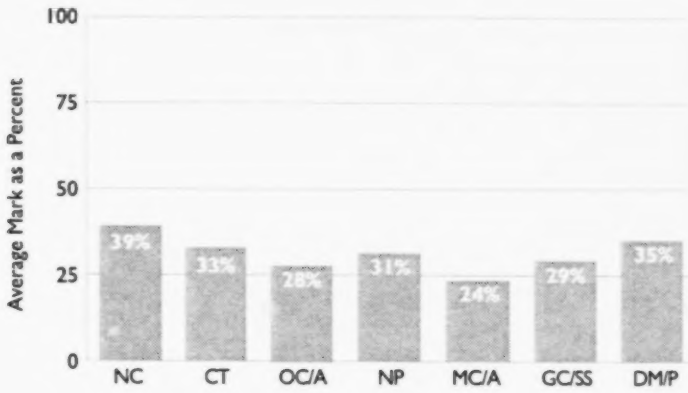
On June 5, 2002, the Junior High Mathematics Program Assessment was conducted in Anglophone grade 8 classrooms throughout the province. The questions in the assessment were based on the province's mathematics curriculum for grades 6, 7, and 8.

The assessment provided information about the major parts of the mathematics program including

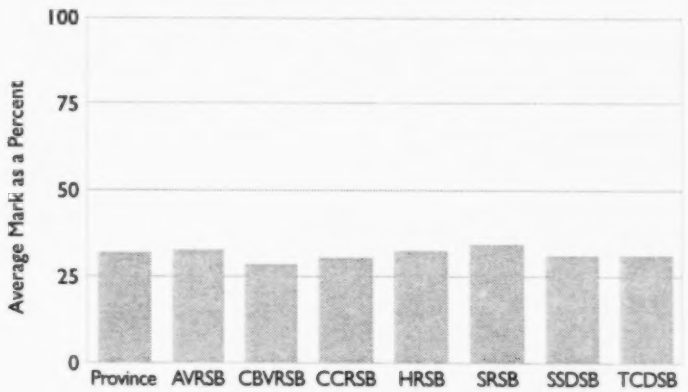
- Number Concepts (NC)
- Computational Tasks (CT)
- Operation Concepts and Applications (OC/A)
- Number Patterns (NP)
- Measurement Concepts and Applications (MC/A)
- Geometry Concepts and Spatial Sense (GC/SS)
- Data Management and Probability (DM/P)

The first chart that follows presents the results for the province on each of the major parts of the assessment, while the second provides a comparison between the provincial average and the board averages.

Junior High Mathematics Assessment 2002



Junior High Mathematics Assessment 2002 by Board



Overall, student performance in the Junior High Mathematics Program Assessment was very weak, and much below expectations for grade 8 students. These results will serve as a baseline for gauging improvement in future years and will be used for follow-up actions to improve student achievement.

Senior High Mathematics

Currently, there is no NSE in mathematics for grade 12 students. Examinations are in development for both Anglophone and Acadian/Francophone students. Mathematics examinations will be implemented beginning in January 2004.

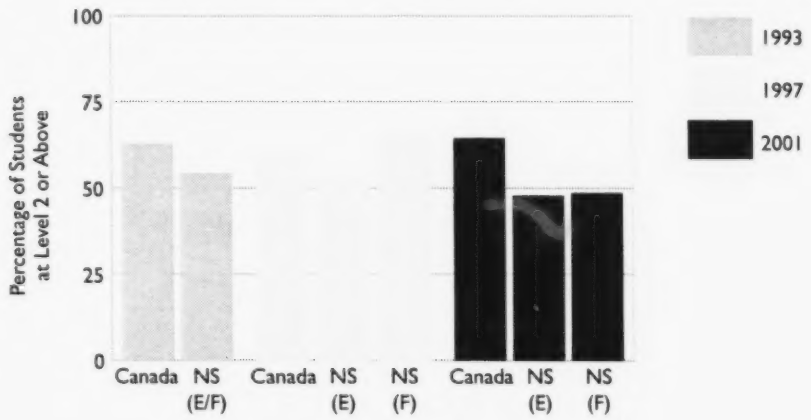
National Assessment

SAIP

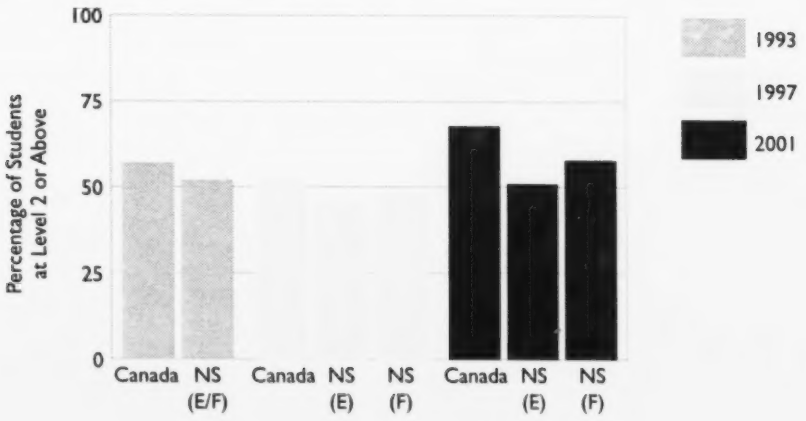
A national mathematics assessment was administered in 1993, 1997, and 2001 to 13- and 16-year-old students in Nova Scotia and other jurisdictions in Canada. The assessment comprised two parts: content (computational skills) and problem solving. Thirteen-year-old students and 16-year-old students are expected to perform at Level 2 or above and Level 3 or above respectively. The following four charts give the results of the three administrations of SAIP and compare these with the results for students in all of Canada [Canada (C), Nova Scotia English—NS(E), Nova Scotia French—NS(F)]. Acadian/Francophone students wrote the national assessment in French.

The first set of two charts shows the results for 13-year-olds on the content and problem-solving parts of the assessment.

SAIP Mathematics Content (13-year-old students)



SAIP Mathematics Problem Solving (13-year-old students)

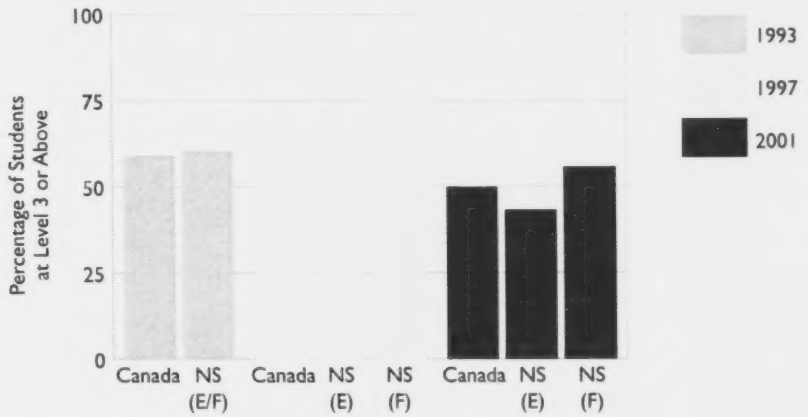


The results in mathematics content in 1993, 1997, and 2001 were significant. In 1993, all Nova Scotia 13-year-old students performed below the national average. In 1997, 13-year-old Acadian/Francophone students did better than the Canadian average. In 2001, all Nova Scotia students fell below the average results for all of Canada.

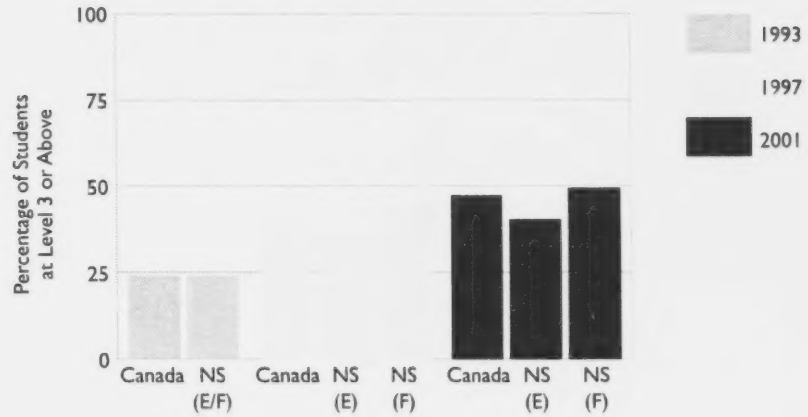
The results in mathematics problem solving for 1993, 1997, and 2001 were also significant. All Nova Scotia 13-year-old students performed below the Canadian average.

The next two charts show the 1993, 1997, and 2001 results for 16-year-olds on the content and problem-solving parts of the assessment.

SAIP Mathematics Content (16-year-old students)



SAIP Mathematics Problem Solving (16-year-old students)



For all 16-year-old students, results in 1993 and 1997 were at the national average in content and problem solving. The results for Anglophone students in 1997 were not statistically different in comparison to the Canadian average. However, in 2001 the results for Anglophone students were below the Canadian average.

Acadian/Francophone students continued to perform at or above the national average in both the content and problem-solving parts of the assessment.

International Assessment

PISA

There are no new results to report for PISA mathematics. The 2000 results showed that Nova Scotia students performed above the international average, ahead of many countries including Sweden, United States, Ireland, and Germany. However, Nova Scotia students performed below the Canadian average.

Summary of Previous Results

Year	Assessment	Age	Results
2000	Mathematics	15	Above the international average, below the Canadian average. Nova Scotia ranked 21st out of a total of 42 (32 countries and 10 provinces).

The next scheduled administration of PISA is the spring of 2003. At that time, 15-year-old students in over 40 countries will be included in the assessment. Results will appear in a future edition of the *Minister's Report to Parents*.

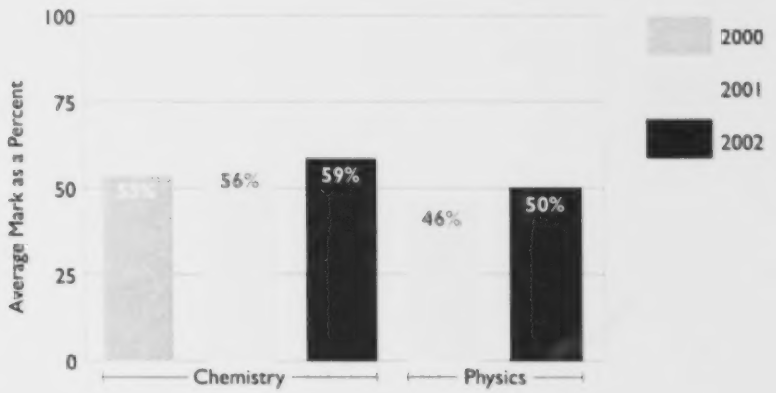
Summary of Assessment Results for Science

Provincial Assessment

Nova Scotia Examinations (NSE) are administered each year in the sciences to grade 12 Anglophone students completing courses at the end of January and June. Fifty percent is a requirement for students to pass each examination.

The following chart gives the results for Chemistry 12 and Physics 12 examinations administered since 2000. The physics examination began in 2001.

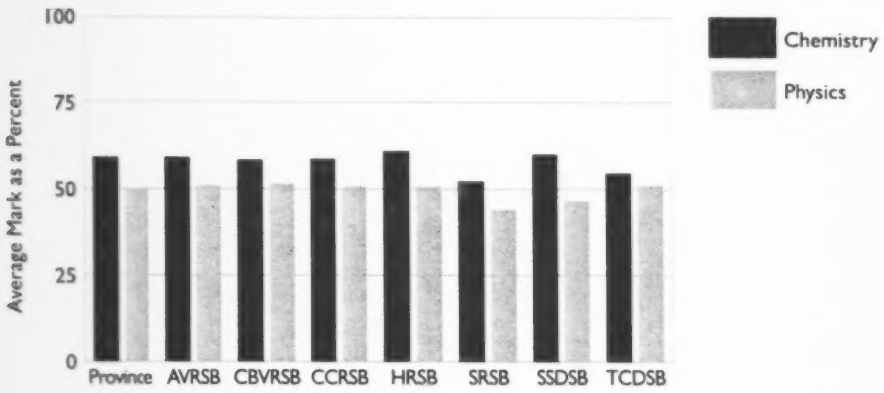
Grade 12 Science Examinations



The provincial results in chemistry and physics have improved significantly. More students are achieving higher average marks. As well, the pass rates for both examinations have improved.

The following chart presents the 2002 results in chemistry and physics for each school board.

Grade 12 Science Examinations 2002 by Board



Results for the Strait Regional School Board in chemistry and physics are statistically significant (see Understanding the Results, pages vi–vii).

National Assessment

SAIP

The SAIP science assessment was administered to 13- and 16-year-old Nova Scotia students in April 1996 and 1999. There are no new results to report in this edition of the *Minister's Report to Parents*. The following is a summary of previous results.

Summary of Previous Results

Year	Assessment	Age	Results
1996	Science	13	At the national average
		16	At the national average
1999	Science	13	At the national average
		16	At the national average

The performance of 13-year-old Anglophone students in Nova Scotia compared favourably with students in all of Canada in 1996 and 1999. In 1996, 13-year-old Acadian/Francophone students in Nova Scotia performed significantly better than students in Canada at level 2 or above. In 1999, 13-year-old Acadian/Francophone students in Nova Scotia did not perform as well as their Canadian counterparts.

In 1996 and 1999, 16-year-old Nova Scotia Anglophone students performed as well as students across Canada at level 3 or above. In 1996, 16-year-old Acadian/Francophone students were above the Canadian average, and in 1999 their performance was at the Canadian average.

International Assessment

PISA

In 2000, Nova Scotia 15-year-old students participated in an assessment designed for students in 32 countries. The results were reported in last year's edition of the *Minister's Report to Parents*. The following is a summary of those results.

Summary of Previous Results

Year	Assessment	Age	Results
2000	Science	15	Above the international average, below the Canadian average. Nova Scotia ranked 16th overall out of 42 (32 countries and 10 provinces).

PISA will be administered again in 2003.

Action Plan—*Learning for Life*

In last year's *Minister's Report to Parents*, a number of actions were detailed to help our students achieve their full potential. These initiatives formed the foundation of our *Learning for Life* strategy, which was launched in September 2002. With the help of teachers, school boards, and parents, a number of the plan's components are already well underway. Some highlights include

> giving our youngest students the attention they need by investing a total of $18 million over three years in more teachers to reduce class size in primary to grade 2, beginning with primary in September 2003
> supporting students' development as readers with nearly $900 000 for new reading books in grade 7 classrooms this year through the introduction of Active Readers in junior high
> ensuring students get a strong foundation in the basics through more class time spent on math and reading with the Time to Learn Strategy, introduced in September 2002
> helping students improve math skills by providing 'math leader' workshops for nearly 900 teachers in May and June 2002
> helping early readers by adapting Reading Recovery French and training more teachers—by 2005, all grade 1 students who need help with reading will have access to this effective teaching method in both English and French
> helping parents support their children's reading at home with the distribution of *Let's Talk About* ... pamphlets to all primary to grade 2 students in January 2003

It's important to note that students whose assessment results are summarized in this report did not have the benefit of these new measures. The results show that our students need more support for learning the basics. *Learning for Life* is now providing that support.

We're moving forward with this plan to help our students achieve their full potential, and assessment results will help guide us along the way. An overview of *Learning for Life* follows.

The Early Years

The goal is to help children become ready to learn by the time they start school; to give them more personal support and attention in the early years; and to identify and work with struggling students to get them, and keep them, on track for success.

> Work with families and community agencies on early childhood development programs that help prepare children for school.
> Continue to support Reading Recovery™ —an early intervention program that gives one-on-one attention to struggling young readers.
> Continue to support Active Young Readers—setting a strong foundation in reading for students from the day they begin school.

Classroom Support

The goal is to ensure all students have the books, resources, and courses they need to succeed in school and after graduation. Building a strong foundation in the basics first—reading, writing, and mathematics— is the top priority.

> Continue to provide resources in support of literacy, mathematics, and science programs.
> Implement the new Elementary Literacy Assessment. Provide interventions and support for struggling students.
> Continue implementation of grades primary–9 mathematics strategy, including support for curriculum delivery and ongoing professional development for teachers to be mathematics leaders in their schools.
> Begin multi-year, multi-million dollar purchase of mathematics textbooks and other resources for grades primary–6.
> Support implementation of new high school mathematics courses. Introduce course options that help struggling students.
> Develop a new grade 12 calculus course.
> Provide new high school physics text books that match the curriculum, and are interesting and relevant to students.

Time to Learn—Language Arts and Mathematics

The language arts and mathematics curriculum—developed by teachers—reflects national and international standards. The goal is to ensure that students have enough time each day to learn and master these essential subjects.

> Implement a minimum standard of 90 minutes daily for language arts, grades primary–6.
> Implement a minimum standard of one hour daily for mathematics in grades 3–6, and 45 minutes daily for grades primary–2.
> Continue to work with school boards on initiatives to add class time in higher grades for language arts and mathematics.
> Implement minimum standard time requirements for language arts and mathematics in grades 7–9.

Quality of Instruction

The goal is to support teachers in providing quality instruction by adding focus on language arts and mathematics in teacher education; providing school board leadership and in-school support; providing straightforward, practical resources that help teachers teach new curricula; and matching professional development to classroom priorities and needs of individual teachers.

> Work with universities on increasing credit hours in language arts and mathematics. (Currently, 9 credit hours are required in social studies, 6 in language arts, and 3 in mathematics.)
> Work with universities in training more mathematics and science teachers.
> Match professional development with classroom priorities through a co-ordinated provincial plan.
> Develop a framework for teacher professional growth plans, which teachers and principals will use to link teacher and classroom needs. The plan must minimize time taken away from the classroom.
> Continue to develop practical resources for teachers that provide sample lesson plans, homework, and other learning activities in language arts and mathematics—helping to focus classroom learning on curriculum outcomes.
> Provide practical teaching resources for physics teachers including guidelines for laboratory work.

> Develop practical teaching resources for chemistry teachers.
> Continue professional development of 880 teachers as mathematics leaders in their schools.
> Build school board leadership in mathematics and language arts to support teachers in schools.

Accountability for Results

All partners have a role to play in supporting student success. The goal is to put more information into the hands of partners to guide planning and to increase accountability for results.

> Produce minister's annual report on assessment results and planned actions; produce school-by-school results; and provide individual student results to parents.
> Introduce new standard student report cards to provide parents with clear and meaningful information on their children's progress and achievement.
> Require school board business plans to include learning improvement targets and actions in priority subjects, and to report annually on progress.
> Conduct pilot projects to develop and implement school improvement plans that are evaluated by external teams, and release annual reports on progress.
> Continue testing in elementary, junior high, and high school, including the implementation of new examinations for grade 12 mathematics courses.

Conclusion

This second annual *Minister's Report to Parents* presents some new results from student assessments conducted in the 2001–2002 school year.

These results will guide us—parents, teachers, school boards, the Department of Education and the school community—in our efforts to improve our students' achievements.

The actions in our *Learning for Life* plan are well underway. We are confident that, over time, these measures will help all our students reach their full potential.

Our *Learning for Life* plan is available at <www.EDnet.ns.ca>, and information on the Program of Learning Assessment for Nova Scotia is available at <www.plans.EDnet.ns.ca>.

For more information, please contact:

Public Schools Branch
Nova Scotia Department of Education
Box 578
Halifax, Nova Scotia
B3J 2S9

NOVA SCOTIA
Department of Education